California Actuarial Advisory Panel
Model Actuarial Funding Policies and Practices for Public Pension and OPEB Plans
2011 Discussion Drafts – Version 1a – for July 28, 2011

Scope of this document:

Identify policy objectives for a level cost actuarial model and related actuarial funding policies
Identify principal elements of actuarial funding policy for representative California public pension and OPEB plans
Consistent with policy objectives, current and emerging actuarial science and governing actuarial standards of practice, develop and describe a basic level cost model, and identify various policy parameters or ranges as:

- Model and preferred practices
- Acceptable practices
- Non-recommended practices
- Identify and discuss special plans and situations, possibly including:
  - CalPERS
  - CalSTRS
  - The University of California Retirement Plan

The model/preferred, acceptable and non-recommended practices are identified to provide illustrative guidance to public plans in California. They not necessarily the recommendations of the CAAP or its panelists.

General Objectives for the level cost model and related practices:

Note: objectives specific to each principal policy element are identified in the discussion of that policy element

1. Future contributions and current plan assets should be sufficient to provide for all benefits expected to be paid to current active, inactive and retired members. This means that contributions should include the cost of current service plus a series of payments to fully fund any unfunded or prefunded past service costs.

2. The funding policy should seek a reasonable allocation of the cost of benefits to the years of service. This includes the goal that annual contributions should, to the extent reasonably possible, maintain a close relationship to the actual and expected cost of each year of service.

3. The funding policy should seek to manage and control future employer contribution volatility to the extent reasonably possible, consistent with other policy goals.

4. Variations from the Normal Cost will generally arise from gains or losses, method or assumption changes or benefit changes and will emerge as an Unfunded (or prefunded) Actuarial Accrued Liability (UAAL). The cost for such variations should be funded over periods consistent with an appropriate balance between policy objectives 2 and 3, that is, balancing the policy objectives of "demographic matching" and "volatility management".

   [could move #4 to UAAL amortization policy element section]

Principal Elements of Actuarial Funding policy"

A comprehensive actuarial funding policy is made up of three components:

1. An **actuarial cost method,** which allocates the total present value of future benefits to each year (Normal Cost) including all past years (Actuarial Accrued Liability or AAL).

2. An **asset smoothing method,** which reduces the effect of short term market volatility while still tracking the overall movement of the market value of plan assets.

3. An **amortization policy,** which determines the length of time and the structure of the increase or decrease in contributions required to systematically (1) fund any Unfunded Actuarial Accrued Liability or UAAL, or (2) recognize any "Surplus", i.e., any assets in excess of the AAL.

An actuarial funding policy can also include one of two types of a "direct rate smoothing" policies:

1. Phase-in of certain extraordinary changes in contribution rates, e.g., phasing-in the effect of assumption changes element over a three year period
2. Contribution "collar" where contribution rate changes are limited to a specified amount or percentage from year to year.

Actuarial Cost Method – allocates the total present value of future benefits to each year (Normal Cost) including all past years (Actuarial Accrued Liability or AAL).

Policy objectives specific to the Actuarial Cost Method

1. The cost of each year of service, generally know as the Normal Cost or service cost, is intended to emerge as a level percentage of member compensation.
2. Pay-related benefit costs should reflect anticipated pay at anticipated decrement [needed?]
3. No gains or losses should occur if all assumptions are met
   a. Exception for asset valuation method that reverts to market over reasonably short period
4. Each participant's benefit should be funded under a reasonable allocation method, generally, by expected retirement date(s) [needed?]

Discussion [TBD]

Model/Preferred Practices

- Entry Age method with level percentage of pay Normal Cost
  - Level normal costs even if benefit accrual changes with age or service
  - All types and incidences of benefits funded through expected retirement dates
  - Exception for benefits unrelated to compensation
- For multiple tiers: Normal Cost based on each member's benefit
- For formula changes within a tier (generally after a fixed date):
  - Normal Cost based on current benefit ("replacement life" Entry Age) or
  - Normal Cost based on each member's composite projected benefit ("Average" Entry Age)

Additional Preferred Practice

- Aggregate method: The Aggregate method should be considered as an implicit amortization policy under the Entry Age method
  - Calculate Normal Cost and UAAL under Entry Age method
  - Determine single amortization period equivalent to Aggregate method

Acceptable Practices

- Projected Unit Credit cost method
- "Funding to Decrement" Entry Age method, where each type and incidence of benefit is funded to each age at decrement

Non-recommended Practices

- Normal Cost based on open tier of benefits even for members not in that open tier ("Ultimate" Entry Age)
  - Exception for benefit variations other than the basic benefit percentage or dollar amounts, e.g., final average earnings period

Asset Smoothing Methods -- reduces the effect of short term market volatility while still tracking the overall movement of the market value of plan assets

Policy objectives specific to Asset Smoothing Method

- Policy should specify all components of asset smoothing method
  - Amount of return subject to deferred recognition (smoothing)
  - smoothing period or periods
  - range constraints on smoothed value ("market value corridor"), if any
  - method of recognizing deferred amounts: fixed or rolling periods
- Unbiased relative to market
  - Use same smoothing periods for gains and losses
  - Any "market value corridors" should be symmetrical around market value

- Unbiased relative to realized vs unrealized gain loss
  - Deferrals based on total return gain/loss relative to assumed earnings rate?
- Incorporate ASOP 44 concepts of:
  - Likely to return to market in a reasonable period AND likely stay within a reasonable range of market, or
  - Sufficiently short period to return to market OR sufficiently narrow range around market
- Reflects empirical experience from recent market volatility

Discussion

1. ASOP implies that longer smoothing periods call for narrower market value corridors
2. Panel consensus: five year smoothing is "sufficiently short" under ASOP 44
   a. Industry practice, GASB Exposure Draft
   b. Implies that five year smoothing with no market value corridor is ASOP compliant
   c. Still may be useful to have market value corridor as part of asset smoothing policy
3. Consider period and corridor impact after large market downturn (e.g., 2008)
   a. Transition from periods of lower cost to periods higher cost
      i. Higher costs level determined primarily by size of loss and UAAL amortization period, not asset smoothing policy
   b. Smoothing period determines length of transition period
   c. Market value corridor determines cost pattern during transition
      i. Wide or no corridor produces straight line transition
      ii. Corridor accelerated cost increases in early years of transition
      iii. Possible policy justifications for accelerated transition
         A. Market timing
         B. Cash flow management
         C. Employer solvency
         D. Employer preferences
      iv. Absent these considerations, 2008 experience argues for wide corridor with five year smoothing period
4. Other industry indicators for market corridor selection
   a. CalPERS 2005 policy: 15 year smoothing with 20% corridor
   b. GASB Preliminary Views: "infinite" smoothing with 15% corridor

Model / Preferred Practices

- Fixed smoothing periods
- Maximum market value corridors for various smoothing periods
  - 5 years, 50%/150% corridor
  - 7 years, 60%/140% corridor
  - 10 years, 70%/130% corridor
  - 15 years, 80%/120% corridor
  - Unlimited, 85%/115% corridor (see GASB PV)

Acceptable Practices

- Five year (or shorter) smoothing with no corridor
- Rolling smoothing periods, with conditions
  - Actuarial value expected to be within 5% of market value within 10 years, if market value of assets earns assumed investment return over same period [from draft]

Non-recommended Practices

- Longer than 5 year smoothing with no corridor

Unfunded Actuarial Accrued Liability Amortization Policy – determines the length of time and the structure of the increase or decrease in contributions required to systematically (1) fund any Unfunded Actuarial Accrued Liability or UAAL, or (2) recognize any "Surplus", i.e., any assets in excess of the AAL

Policy objectives specific to Actuarial Cost Method

- Balance of demographic matching and volatility management (see general objective #4)
- Explicit consideration of source of UAAL
  - Experience gains and losses
  - Changes in assumptions and methods
  - Benefit changes
- Explicit consideration (but not preclusion) of negative amortization (for level percent of pay method)
- Accountability and transparency
  - History and sources of UAAL
  - Full amortization date for UAAL
- Special consideration or amortization of Surplus, consistent with general objective #2

Discussion

1. General preference for level percentage amortization
   a. Consistent with Normal Cost
   b. This discussion of periods presumes level percentage amortization
2. For gains and losses balancing "demographic matching" and "volatility control" leads to an ideal amortization period range of 15 to 20 years
   a. Lesson learned form the 1990s is that less than 15 years gives too little "volatility control", especially for gains
   b. Longer than 20 years gets into negative amortization (which starts at around 16 to 18 years for most assumptions)
   c. Here negative amortization is an indicator for not enough "demographic matching"

3. For assumption changes, a case can be made for longer amortization than for gain/loss, since liabilities are remeasured to anticipate multiple years of future gains or losses.
4. However longer than 25 years entails too much negative amortization
   a. "25 is the new 30" for UAAL
5. For Surplus, lesson from the 1990s is that short amortization of surplus leads to full or partial contribution holidays (contributions less than Normal Cost)
   a. Violates objective #2; Consensus that this is not good public policy.
   b. See for example Recommendation 7 by 2007 Governor's Commission, CalPERS 2005 funding policy
   c. Use longest period available, longer than for UAAL

Model / Preferred Practice

- Layered fixed period amortization by source of UAAL
- Level percent of pay amortization
- Amortization periods

Source	Period
Active Plan Amendments	Demographic or 15
Inactive Plan Amendments	Demographic or 15
Experience Gain/Loss	15 to 20
Assumption Changes	15 to 25
Early Retirement Incentives	5 or less

- 30 year amortization of surplus (for plans with ongoing Normal Cost)
  - Generally will eliminate all prior UAAL layers
- 20 to 25 year amortization of change from PUC to Entry Age

- Combine gain/loss (and other) layers or restart amortization only to avoid "tail volatility"
  - Avoid using restart of amortization to achieve de facto rolling amortization
- Restart amortization layers when moving from Surplus to UAAL condition

Acceptable Practices

- Level dollar amortization
- Up to 15 year amortization of a single combined gain/loss layer
  - With Model/Preferred periods for other sources of UAAL

- Up to 25 year layered fixed period amortization by source of UAAL
  - [note: work group discussion limited acceptable gain/loss amortization to 20 years]
- Up to 25 year fixed period single layer amortization
  - Marginally acceptable since requires periodic resetting of amortization period
  - [note: work group discussion limited acceptable gain/loss amortization to 20 years]
- 30 year amortization of change from PUC to Entry Age

- [note: work group discussion limited acceptable gain/loss amortization to 20 years]

Non-recommended Practices

- Rolling/open amortization over 15 years (or up to point of negative amortization)

[prior draft text holding tank for UAAL amortization]

Prior draft text

- Type
  - Level percent of pay
    - only appropriate for Actuarial Funding Methods that allocate Normal Cost as a percent of pay, e.g. Entry Age Normal or Aggregate)
    - negative amortization not allowed for open (rolling) amortization periods
  - level dollar amount

- Period – objective is to balance demographic matching with volatility management
  - Not greater than a 30-year fixed period [consider 25, except for surplus]
  - Gains/losses should generally not be amortized longer than 15 years [consider 15 to 20]
  - Plan changes should generally not be amortized longer than 20 years [demographic basis, not to exceed 15 years, shorter for early retirement windows]
  - Method and assumption changes should generally not be amortized longer than 20 years [consider 15 to 25]
  - Retroactive benefit increases should generally be amortized over future working lifetime [see above]
  - Surpluses should be amortized in the same manner [only if there is no Normal Cost, otherwise use 30 years ONLY for surplus, to control contribution holidays]
- Amortization bases can be combined and amortized over a single amortization period (aka "Fresh Start"):
- Period should not be longer than 30 years and [25 is the new 30!]
- Fresh Starts should occur infrequently (e.g. not more than once very 10 years)
- Restart whenever moving into or out of surplus
- Strategic combination of bases to control "tail volatility".

Practices Deemed to be Unreasonable

- Gains or losses generated if all assumptions are met
- Except as noted above for asset smoothing
- Unfunded actuarial liability not expected to be reduced over 20 years, if assumptions are met
- Contributions increase (as a percent of payroll) over time (except if resulting from asset smoothing)